

What is claimed is:

1. A system for controlling access to a vehicle, the system comprising:
a vehicle-associated access control module for enabling access to
the vehicle by a first authorized user following completion of a
5 verification sequence,
a verification module for enabling completion of the verification
sequence through communications with the vehicle-associated access
control module, and
a communications channel for supporting communications
10 between the vehicle-associated access control module and the remote
verification module.
2. The system of claim 1 wherein the communications channel
includes the Internet.
- 15 3. The system of claim 2 wherein the communications channel
includes wireless communications elements.
4. The system of claim 3 wherein the verification module includes a
20 server that stores personal identification information representative of
the first authorized user.
5. The system of claim 4 wherein the server includes elements for
enabling the first user to reserve, in advance, a predetermined period of
25 access to the vehicle.

6. The system of claim 5 wherein the server includes elements for verifying, in real-time, a personal identifier provided by the first authorized user as a prerequisite to completion of the verification sequence.
- 5 7. The system of claim 6 wherein the personal identifier includes a personal identification number.
8. The system of claim 6 wherein the personal identifier includes a
10 personal identification object.
9. The system of claim 8 wherein the personal identification object is an electronic device containing a unique code representative of the first authorized user.
- 15 10. The system of claim 9 wherein
the electronic device is a chip card or tag, and
the vehicle-associated processor is in communication with a chip
card detector that enables access to the vehicle only when a validated
20 chip card is placed in proximity to the card detector.
11. The system of claim 10 wherein the vehicle-associated processor includes associated audio/visual display elements.
- 25 12. The system of claim 11 wherein the audio/visual display elements include a visual display and a speaker.

13. The system of claim 12 wherein the vehicle-associated processor includes data entry elements for use by the user to enter data.
14. The system of claim 13 wherein the data entry elements include
5 a keyboard.
15. The system of claim 13 wherein the data entry elements include a touch-screen.
- 10 16. The system of claim 13 wherein the data entry elements can be used to enter a user-associated personal identification number to identify the user.
- 15 17. The system of claim 16 wherein the vehicle-associated processor includes a user interface processor for processing information-representative signals from the data entry elements and to the display.
18. The system of claim 17 wherein the vehicle-associated processor is in communication with an ignition disabling module for preventing
20 actuation of vehicle ignition unless the verification sequence is successfully completed.
19. The system of claim 18 wherein the vehicle-associated processor is in communication with door lock actuator elements, for unlocking the
25 vehicle door locks after the verification sequence is successfully completed.

27. The system of claim 26 wherein the system accepts and registers newly added vehicles and vehicle-associated access control modules.
28. The system of claim 27 wherein the vehicle-associated access control module can monitor total access time and distance covered.
29. The system of claim 28 wherein total access time is measured from vehicle pickup time to drop-off time.
30. The system of claim 29 wherein distance covered is measured from vehicle pickup to drop-off.
31. The system of claim 27 wherein the communications channel includes a program for communication between the vehicle-associated access control processor and the server and a database resident on the server.
32. The system of claim 31 wherein the vehicle-associated access control processor is capable of communicating with the server via 1) the Internet, or (2) another communications network.
33. The system of claim 5 wherein the vehicle-associated access control processor includes elements for verifying, in real-time, a personal identifier provided by the first authorized user as a prerequisite to completion of the verification sequence

34. A method of providing controlled access to a vehicle, the method comprising
- accepting from a first authorized user a reservation of access to a first vehicle at a first time,
 - 5 registering, in a database, a reservation information item representative of the identity of the first authorized user, identity of the first vehicle or pool of vehicles, and a value representative of the first time prescribed by the reservation,
 - subsequently accepting, from a vehicle-associated processor, a request-to-access message indicating that a user is at the first vehicle or one of a pool of vehicles requesting access thereto,
 - 10 responding to the request-to-access message by entering into a verification sequence, the verification sequence including (1) determining the identity of the user requesting access to the vehicle and
 - 15 (2) comparing, against information contained in the reservation information item in the database, the identity of the user requesting access to the vehicle, the identity of the vehicle, and the time of the request for access, and
 - if (1) the user requesting access is the first user, (2) the vehicle is the first vehicle or one of a pool of vehicles, and (3) the time of the request for access is the first time, then enabling the first user to access the vehicle.

35. A method of enabling controlled vehicle access by a first
- 25 authorized user to a first vehicle within a fleet of vehicles, the method including the steps of

accepting an advance reservation by the first authorized user to reserve access to the first vehicle at a first authorized location beginning at a first authorized time,

5 verifying, when the first authorized user reaches the first vehicle at the first authorized time, that the first authorized user has a valid reservation for access to the first vehicle at the first authorized time, and enabling the first authorized user, following successful completion of the verifying step, to gain access to and initiate operation of the first vehicle.

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36. The method of claim 35 comprising the further steps of:

recognizing, when the first authorized user returns the first vehicle to either the first authorized location or a second authorized location, the return of the first vehicle, and

15 automatically billing an account of the first authorized user upon return of the first vehicle.

37. The method of claim 36 wherein the step of accepting a reservation includes the step of verifying the identity of the user attempting to make a reservation.

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38. The method of claim 37 wherein the step of verifying the identity of the user attempting to make a reservation includes the step of verifying the status of the user's account.

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39. The method of claim 38 including the further step of notifying the user if a problem exists with the user's account.

40. The method of claim 39 wherein the step of accepting a reservation includes the step of enabling the user to specify requested vehicle, requested pickup location, request vehicle access start date and
5 time, and requested vehicle access end date and time.

41. The method of claim 40 wherein the step of accepting a reservation includes the further step of verifying whether the requested vehicle is available at the requested pickup location at the requested start
10 date and time.

42. The method of claim 41 including the further step of presenting the user with alternate choices if the requested vehicle is not available at the requested pickup location at the requested vehicle access start date
15 and time.

43. The method of claim 42 including the further step of transmitting, upon acceptance of the reservation, information representative of the reservation to a vehicle-associated access control
20 processor.

44. The method of claim 43 wherein the step of verifying that the user has a valid reservation for access to the vehicle includes the further steps of:

25 enabling the user to provide to the vehicle-associated access control processor information representative of the user's identity,

verifying, using the vehicle-associated access control processor, whether the user, identified by way of the information representative of the user's identity, has a reservation,

5 if the identified user has a reservation, verifying whether the identification provided by the user to the vehicle-associated access control processor is valid, and

if the customer identification is valid, authorizing the step of enabling the user to obtain access to the vehicle.

10 45. The method of claim 44 wherein the verifying steps are executed by the vehicle-associated access control processor checks in communication with a database.

15 46. The method of claim 45 wherein the database is resident on a server.

47. The method of claim 46 wherein
the verifying steps include the further steps of
checking, using the vehicle-associated access control processor,
20 whether a communications channel to the server is available, and
if a communications channel to the server is available, verifying whether the customer identification is valid by comparing with information in the server's database or a local copy of this information resident in the vehicle-associated access control processor; or
25 if a communications channel to the server is not available, checking whether the customer identification by comparison with information resident in the vehicle-associated access control processor.

48. The method of claim 47 wherein access is refused if the identified user does not have a reservation.
- 5 49. The method of claim 47 wherein access is refused if the identified user's identification is not valid.
50. The method of claim 49 wherein the step of recognizing return of the vehicle includes the further steps of:
 - 10 notifying the server of vehicle return and transmitting, to the server, usage information representative of usage time and distance covered.
51. The method of claim 50 further including the step of
 - 15 automatically billing a user after recognizing the return of the vehicle, wherein the step of automatically billing includes the further steps of:
 - receiving usage information,
 - calculating charges corresponding to usage time and distance covered, and
 - 20 transmitting for payment the calculated charges.
52. A vehicle shared-use system comprising a plurality of vehicle-associated access control processors and a verification module, the system comprising:
 - 25 means for enabling access to a vehicle by a first authorized user following completion of a verification sequence,

means for enabling completion of the verification sequence
through communications with one of the vehicle-associated access
control module, and

- means for communicating between the vehicle-associated access
5 control module and the remote verification module.

Patent for Pending